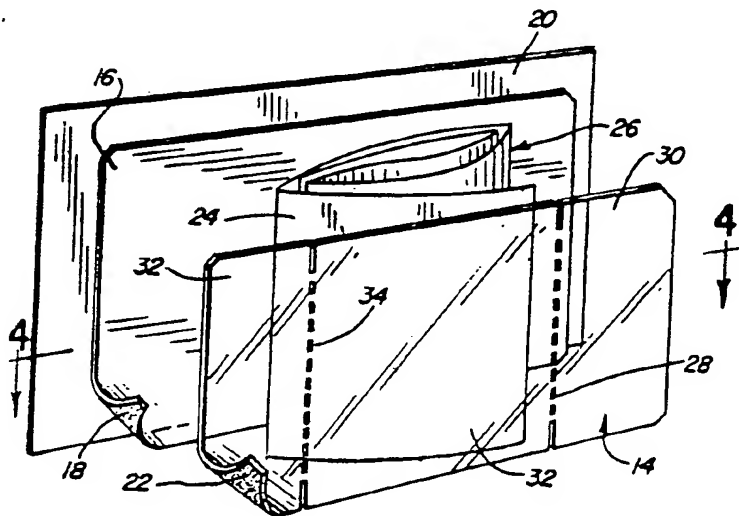


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁴ : B42D 15/00</p>	<p>A1</p>	<p>(11) International Publication Number: WO 86/ 04551</p> <p>(43) International Publication Date: 14 August 1986 (14.08.86)</p>
<p>(21) International Application Number: PCT/US86/00154</p> <p>(22) International Filing Date: 29 January 1986 (29.01.86)</p> <p>(31) Priority Application Number: 696,773</p> <p>(32) Priority Date: 31 January 1985 (31.01.85)</p> <p>(33) Priority Country: US</p> <p>(71) Applicant: PAMCO LABEL CO. [US/US]; 9609 West Bryn Mawr Avenue, Rosemont, IL 60018 (US).</p> <p>(72) Inventor: MACK, Jory, B. ; 5648 North Kimball, Chicago, IL 60659 (US).</p> <p>(74) Agent: GARRETTSON, Ellis; Two North LaSalle Street, Suite 2010, Chicago, IL 60602 (US).</p>		<p>(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent).</p> <p>Published <i>With international search report.</i></p>

(54) Title: MULTI-LAYERED LABEL



(57) Abstract

A multi-layered label (10) which may be torn open to exposed an interior leaflet (26). First (14) and second (16) cover sheets are peripherally sealed together, typically with end seals. A multi-layer leaflet member (26) is positioned between the first (14) and second (16) cover sheets, at least one layer of the leaflet member being sealed to an internal face of one of the first and second sheets. A line of tearing weakness (28) in the first cover sheet (14), permits opening thereof for access to the leaflet member (26).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GA	Gabon	MR	Mauritania
AU	Australia	GB	United Kingdom	MW	Malawi
BB	Barbados	HU	Hungary	NL	Netherlands
BE	Belgium	IT	Italy	NO	Norway
BG	Bulgaria	JP	Japan	RO	Romania
BR	Brazil	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	LI	Liechtenstein	SN	Senegal
CH	Switzerland	LK	Sri Lanka	SU	Soviet Union
CM	Cameroon	LU	Luxembourg	TD	Chad
DE	Germany, Federal Republic of	MC	Monaco	TG	Togo
DK	Denmark	MG	Madagascar	US	United States of America
FI	Finland	ML	Mali		
FR	France				

1
MULTI-LAYERED LABEL

TECHNICAL FIELD

5 In the packaging of certain chemicals, drugs and the like, the need often arises to provide the user with a great deal of information on the label. This may be necessary because of regulations laid down by Government Agencies, and also to provide the user with instructions on how to effectively and safely use the product, etc.

10 Accordingly labels having multiple layers which may be opened for reading have become commercially available. See for example U.S. Patent No. 4,323,608. However, success in the label market requires manufacturers to provide labels that are very
15 cost effective and inexpensive to manufacture. The labels of the prior art have not been as inexpensively manufacturable as would be most desirable. Furthermore, various advantageous features for labels are lacking.

20 In accordance with this invention, a multi-layered label is provided which can be manufactured for a fraction of the cost of the prior art labels. Furthermore, the labels may exhibit added beneficial features such as a recloseability of the multi-layered
25 label by the user, so that the information contained in the label may be preserved during use of the container.

DESCRIPTION OF THE INVENTION

A multi-layered label is provided which may be torn open to expose an interior leaflet. In accordance with this invention, first and second cover sheets are peripherally sealed together, typically with seals just at opposed ends of the label. A typically separate, multi-layered leaflet member is positioned between the first and second cover sheets, at least one layer of the leaflet member being sealed to an internal face of one of the first and second sheets. Typically, the internal face of the first sheet is coated with contact adhesive and retains the leaflet member.

A line of tearing weakness is provided in the first cover sheet to permit opening thereof for access to the leaflet member.

It has been found that by the use of separate first and second cover sheets, with a multi-layer leaflet member being secured to one or both inside surfaces of the first and second cover sheet, a design of multi-layered label is provided which is susceptible to automated manufacturing procedures, having the effect of greatly reducing the cost of such labels, when compared with the labels of the prior art. It is desirable in certain modes of use for the label of this invention to have a first cover sheet which is made of transparent material. Thus, the printing on the leaflet member is visible through the cover sheet, and the cover sheet does not have to be printed.

The leaflet member may be in booklet form, or it may be a strip folded into a plurality of layers with one face of an end panel of the strip being laminated or glued to an inner surface of one of the cover sheets.

In another advantageous embodiment, an end of either the leaflet member or the second cover sheet defines a tab member which is positioned by folding between the first and second cover sheets. The first
5 cover sheet then defines a slot positioned and proportioned to receive the tab, for reclosing of the label after opening thereof.

The second cover sheet typically carries an adhesive layer on its outer face for application of
10 the label to a surface, although any other conventional application means of the label may be used if desired. When the adhesive layer is present, a removable backing covering the adhesive layer is also generally provided for protection of the adhesive
15 layer until use.

One specific, multi-layered label of this invention includes the first and second cover sheets sealed together at opposed ends, and a multi-layer, folded leaflet member positioned between the first and
20 second cover sheets. At least the first cover sheet is transparent, with one layer of the leaflet member defining a printed, outer face which is bonded, typically by lamination, to the inner face of the first cover sheet so as to be visible therethrough.

25 An off-center line of tearing weakness is then provided at the first cover sheet to permit the first sheet to be opened to expose inner folds of the leaflet member.

In another embodiment, a multi-layered label
30 comprises first and second cover sheets which may typically be opaque, being sealed together at opposed ends. A multi-layer, folded-strip leaflet member is positioned between the first and second cover sheets. An end layer of the folded leaflet member strip is
35 bonded to an inner face of the first cover sheet. An ultimate end portion of the end layer of the folded

4

leaflet is positioned adjacent one of the opposed ends of the label, and is reverse-folded to extend toward the center of the label to define a tab member.

5 The first cover sheet and the bonded portion of the end layer of the folded leaflet define lines of tearing weakness which are in registry with each other so that both the first cover sheet and end layer may be simultaneously torn open by tearing the lines of weakness. The lines of weakness are located adjacent
10 the tab member, and a slot is defined in the first cover sheet, which is positioned and proportioned to receive the tab member subsequent to opening of the label by rupturing of the lines of tearing weakness.

Thus, the label may be opened, and the
15 folded-strip leaflet member unfolded to read the contents, for example, handling instructions for a drug or a chemical. Following this, the folded-strip leaflet member may be refolded, and the tab placed
20 through the slot in the first cover sheet so that the label is folded up again.

Typically, in many of the labels of this invention, the outermost printing of the label presented to the viewer prior to opening is duplicated on the innermost layer. For example, the inner
25 surface of the second cover sheet, or the last layer of the leaflet if the leaflet is bonded to the second cover sheet. This permits the most essential portions of the label to remain permanently on the container even if someone tears away the leaflet.

30 The above-described, multi-layered label embodiment may also carry an adhesive layer on its outer face and a removable backing as previously described.

As a third, specific embodiment in
35 accordance with this invention, a multi-layered label may once again define first and second cover sheets

5

sealed together at opposed ends, and a multi-layer folded leaflet member positioned between the first and second cover sheets. At least one layer of the leaflet member is bonded to an inner face of the cover sheet, a portion of the last layer of the leaflet member adjacent the second cover sheet being folded over adjacent one opposed end of the label to form a tab portion extending toward the center of the label.

A slot is then defined in the first cover sheet which is positioned and proportioned to receive the tab portion so that the label may be reclosed after opening in the manner described above. A line of tearing weakness as before is defined in the first cover sheet adjacent one opposed end to which the tab portion is adjacent. Accordingly, breaking of the line of tearing weakness permits the first cover sheet to be opened to expose the multi-layer, folded leaflet member. The tab member may then be used to reclose the label.

The leaflet member of this particular embodiment may define a plurality of pages secured together at one end only in book form. Alternatively, the leaflet may comprise a folded strip if desired.

In this third embodiment an adhesive layer may be carried on the outer face of the second cover sheet, along with a removable backing as described above.

DESCRIPTION OF THE DRAWINGS

In the drawings, Figure 1 is a perspective view of a label of this invention attached on a container.

Figure 2 is a perspective view similar to Figure 1 showing the label in an open, unfolded form.

Figure 3 is an exploded perspective view of

6

a label of this invention prior to assembly.

Figure 4 is a longitudinal sectional view taken along line 4-4 of Figure 3.

5 Figure 5 is a perspective view of a second embodiment of the label of this invention.

Figure 6 is a perspective view, with a portion broken away, of the label of Figure 5 after opening.

10 Figure 7 is a perspective view of the label of Figure 6 after it has been reclosed once again using the tab.

Figure 8 is a sectional view taken along line 8-8 of Figure 5 but in exploded form.

15 Figure 9 is a perspective view of a third embodiment of the label of this invention.

Figure 10 is a perspective view of the label of Figure 9, with portions broken away, showing the label in its open configuration.

20 Figure 11 is a perspective view showing the label of Figure 10 after it has been reclosed once again using the tab.

Figure 12 is a sectional view taken along line 12-12 of Figure 9 but in exploded form.

25 Figure 13 is a fragmentary perspective view similar to Figure 10 but showing a different embodiment.

DESCRIPTION OF SPECIFIC EMBODIMENTS

30 Referring to Figures 1 through 4, label 10 is shown stuck to a container 12. As particularly shown in Figure 3, label 10 defines first cover sheet 14 and second cover sheet 16 which in this particular embodiment is coated on its outer face with contact adhesive 18 and has a removable backing sheet 20 protecting such contact adhesive. For application on

container 12 the backing sheet 20 has been removed.

First sheet 14 also contains on its inner face a layer of contact adhesive 22 to which a layer 24 of folded leaflet member 26 is adhered. It can be
5 seen that leaflet member 26 is made of a strip of paper folded into a series of layers or panels. While first cover sheet 14 adheres to leaflet 26 in its central portions, its two end portions 30, 32 adhere to second cover sheet 16 at the two end areas to seal
10 label 10 together.

First cover sheet 14 carries a line of tearing weakness 28 which may be a series of perforations. Also, both cover sheets 14, 16 may be transparent, so that the printing on the outer face of
15 layer 24 of label 26 may be visible through cover sheet 14 to the reader.

When it is desired to gain access to the label to unfold and read it, one tears line of weakness 28 to open it. Central portion 32 of first
20 sheet 14 can then swing open about line 34 which may, if desired, be creased to form a hinge or may just naturally be an area of folding as the center section is opened. As shown in Figure 2, leaflet 26, which is in folded strip form, may be unfolded as shown in the
25 phantom lines for study of the information thereon. Typically, the central portion of second cover sheet 16 will also contain information corresponding to the information on the outer face of layer 24 of the leaflet member. First cover sheet 24 may also be torn
30 away on line 34 for removal, if desired, with line 34 being perforated.

Accordingly a multi-layered label is provided which may be easily opened for reading extensive information contained therein.

35 The labels of this invention may be automatically assembled, with their various parts

8

being cut from roll stock and appropriately processed by folding, gluing and perforating machinery.

Turning now to Figures 5 through 8, a second embodiment of this invention is disclosed. Label 40 defines first and second cover sheets 42, 44 which are sealed together at their respective ends 46. As shown in the exploded view of Figure 8, both layers 42 and 44 are coated with contact adhesive 50, with removable backing 48 covering and protecting the contact adhesive layer on second sheet 44 until it is desired to stick the label to a container or the like.

Between the two cover sheets 42, 44 is a folded label 52, the folded layers of which are best seen in Figures 6 and 8. An end layer 54 of folded leaflet strip 52 is bonded to the inner face of first cover sheet 42 by means of its layer 50 of contact adhesive.

An ultimate end portion 56 of layer 54 adjacent one of the opposed ends of label 40 defines a tab member 58. Ultimate end portion 56 is, in turn, sealed to end portion 60 of first cover sheet 42.

First cover sheet 42 and end layer 54 of leaflet member 52 together define lines of tearings weakness 62, 64 which are in registry with each other so that both first cover sheet 42 and end layer 54 may be simultaneously torn open by tearing the lines of weakness 62, 64. Slot 66 is defined in first cover sheet 42 which, as show, is positioned and proportioned to receive tab member 58 after opening of the label by rupturing lines of weakness 62, 64.

Figure 6 shows the label in its open configuration where leaflet 52 can be studied. Thereafter, the system is reclosed in the manner of Figure 7, with tab 58 passing through slot 66, after leaflet 52 has been refolded and placed between the two cover sheets 42, 44.

Figures 9 through 12 illustrate a third embodiment of the invention of this application. Label 70 carries first and second cover sheets 72, 74 in a manner similar to the previous embodiments.

5 However, in this instance, the leaflet member is a booklet 76 of several folded sheets held together by a staple 78 in the conventional manner of assembling a booklet. The first sheet 80 of booklet 76 adheres to first cover sheet 72 by its layer of
10 contact adhesive as in previous embodiments. If desired, last sheet 82 of booklet 76 may adhere to second cover sheet 74, or it may be unattached. Specifically, last sheet 82 may fit between part of
15 end seal 83 of first and second cover sheets 72, 74 for retention. An ultimate end portion 84 of last sheet 82 of booklet 76 defines a tab member 86. A line of tearing weakness 88, typically perforations, is defined in first cover sheet 72. First cover sheet
20 72 and sheet 80 also define a slot 90 positioned and proportioned to receive tab portion 86.

 Accordingly, label 70 may be applied to a surface 92 by means of contact adhesive 94 on second cover sheet 74 by removing protective layer 96 and applying the label. When it is desired to open label
25 70, one ruptures line of tearing weakness as to cause the label to open as is shown in Figure 10. Leaflet 76 is in booklet form so it does not unfold, but the reader can page through the various pages 100 for the information contained therein.

30 When it is desired to refold the booklet, tab 86 is brought forward of the remainder of the booklet and inserted into slot 90 of cover 72 for reclosing of the label.

 Figure 13 shows a modified version of a
35 label which otherwise is similar to the design of Figures 9-12. Tab 86 is eliminated and in its place

10

ultimate end portion 84a, retained by seal line 83a, carries gummed adhesive line 102 to stick to the first cover sheet, when resealing of the label is desired.

5 Accordingly, the labels of this invention provide improved characteristics. They can be recloseable so that after study of the contents, the label can be closed up again so that it will not be damaged or torn off during storage or moving of the container or other object to which it is affixed.

10 Also, the design of the label is particularly susceptible to automated manufacture, resulting in great improvements in economy and manufacturing volume.

15 The above has been offered for illustrative purposes only, and is not intended to limit the scope of the invention of this application, which is as defined in the claims below.

THAT WHICH IS CLAIMED IS:

1. In a multi-layered label which may be torn open to expose an interior leaflet, the improvement comprising, in combination:

5 first and second cover sheets peripherally sealed together, and a separate multi-layer leaflet member positioned between said first and second cover sheets, at least one layer of said leaflet member being sealed to an internal face of one of said first and second sheets, and a line of tearing weakness in
10 said first cover sheet to permit opening thereof for access to said leaflet member.

2. The label of Claim 1 in which said first cover sheet is made of transparent material, whereby printing on the leaflet member is visible therethrough.

3. The label of Claim 1 in which said leaflet member comprises a strip folded into a plurality of layers.

4. The label of Claim 1 in which an end of one of said leaflet member and cover sheets defines a tab member positioned by folding between said first and second cover sheets and adhering to said second
5 cover sheet, said first cover sheet defining a slot positioned and proportioned to receive said tab for reclosing of the label after opening thereof.

5. The label of Claim 1 in which said second cover sheet carries an adhesive layer on its outer face, and a removable backing covering said adhesive layer.

6. In a multi-layered label which may be torn open to expose an interior leaflet, the improvement comprising, in combination:

5 first and second cover sheets sealed
together at opposed ends, and a multi-layer folded
leaflet member positioned between said first and
second cover sheets, at least the first cover sheet
being transparent, one layer of said leaflet member
defining a printed outer face which is bonded to an
10 inner face of the first cover sheet so as to be
visible therethrough, and an off-center line of
tearing weakness in said first cover sheet to permit
said first sheet to be opened to expose inner folds of
said leaflet member.

7. The label of Claim 6 in which said second cover sheet is transparent.

8. The label of Claim 6 in which said second cover sheet carries an adhesive layer on its outer face, and a removable backing covering said adhesive layer.

9. In a multi-layered label which may be torn open to expose an interior leaflet, the improvement comprising, in combination:

5 first and second cover sheets sealed
together at opposed ends, and a multi-layer, folded-
strip leaflet member positioned between said first and
second cover sheets, an end layer of said folded
leaflet member strip being bonded to an inner face of
the first cover sheet, an ultimate end portion of said
10 end layer adjacent one of the opposed ends of said
label being reverse folded to extend toward the center
of said label and defining a tab member, said first
cover sheet and end layer of the folded leaflet

13

15 defining lines of tearing weakness in registry with
each other so that both said first cover sheet and end
layer may be simultaneously torn open by said lines of
weakness, said lines of weakness being located
adjacent said tab member, and slot defined in said
first cover sheet positioned and proportioned to
20 receive said tab member subsequent to opening of said
label by rupturing said lines of tearing weakness.

10. This label of Claim 9 in which said
first cover sheet is opaque.

11. The label of Claim 9 in which said
second cover sheet carries an adhesive layer on its
outer face, and a removable backing covering said
adhesive layer.

12. In a multi-layered label which may be
torn open to expose an interior leaflet, the
improvement comprising, in combination:

first and second cover sheets sealed
5 together at opposed ends, and a multi-layer, folded
leaflet member positioned between said first and
second cover sheets, at least one layer of said
leaflet member being bonded to an inner face of said
first cover sheet, a portion of said last layer of the
10 leaflet member adjacent the second cover sheet being
folded over said one layer adjacent one opposed end to
form a tab portion extending toward the center of said
label, a slot defined in the first cover sheet and
cover of leaflet member in registry, positioned and
15 proportioned to receive said tab portion, and a line
of tearing weakness defined in said first cover sheet
adjacent said one opposed end, whereby breaking of
said line of tearing weakness permits said first cover
sheet to be opened to expose said multi-layer, folded

14

20 leaflet member, and said tab member may then be used to fit in said slot to reclose the label.

13. The multi-layered label of Claim 12 in which said folded leaflet member defines a plurality of pages secured together at one end only in book form.

14. The label of Claim 12 in which said second cover sheet carries an adhesive layer on its outer face, and a removable backing covering said adhesive layer.

//

113

FIG. 1

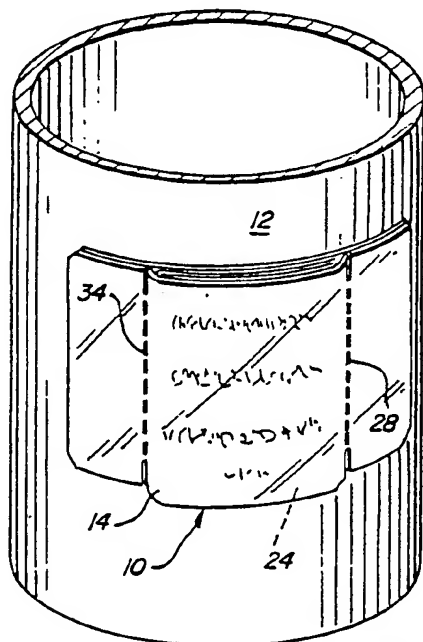


FIG. 2

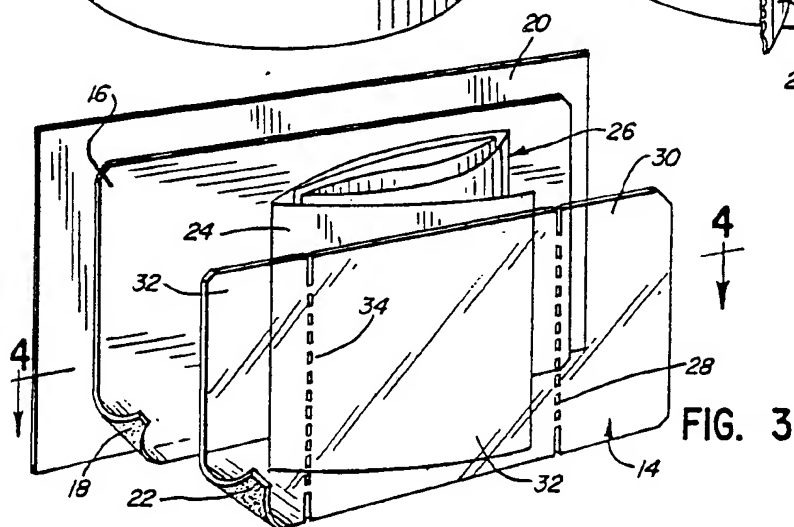
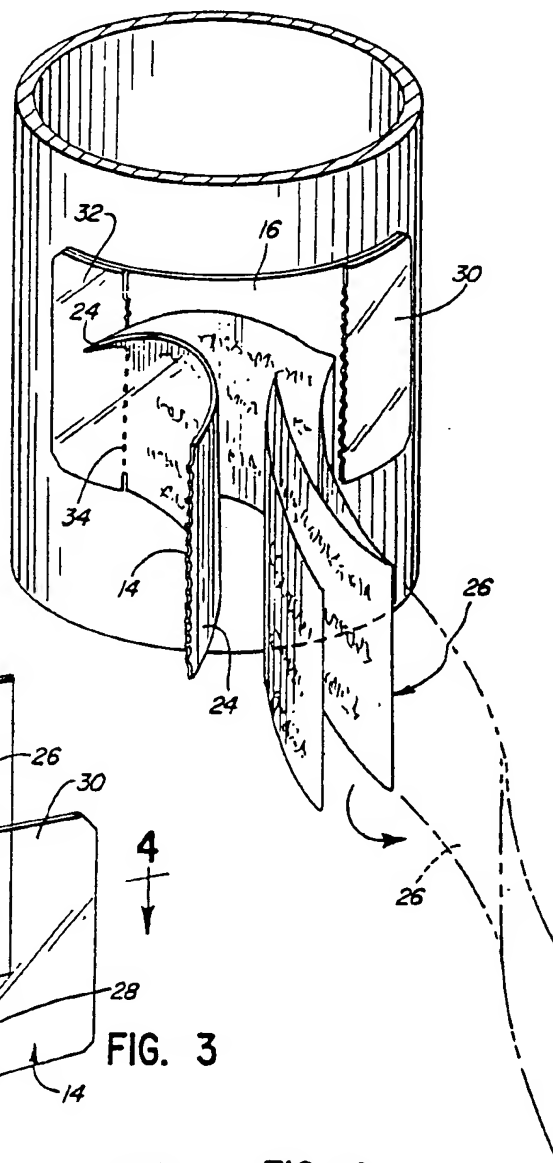


FIG. 3

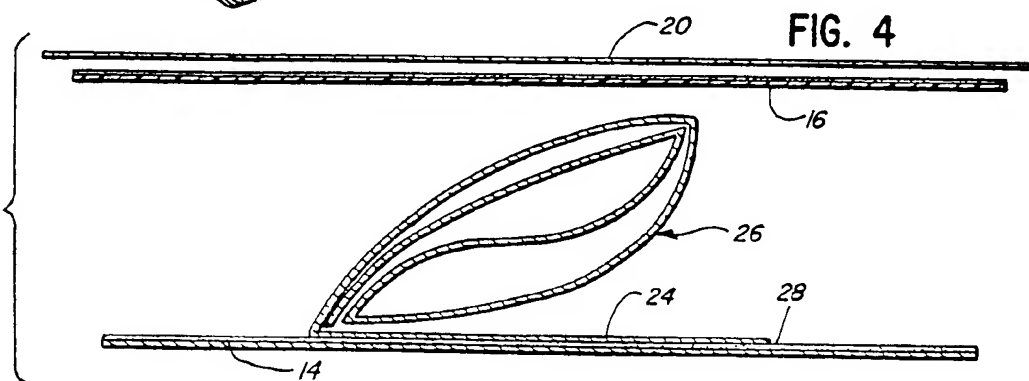


FIG. 4

FIG. 5

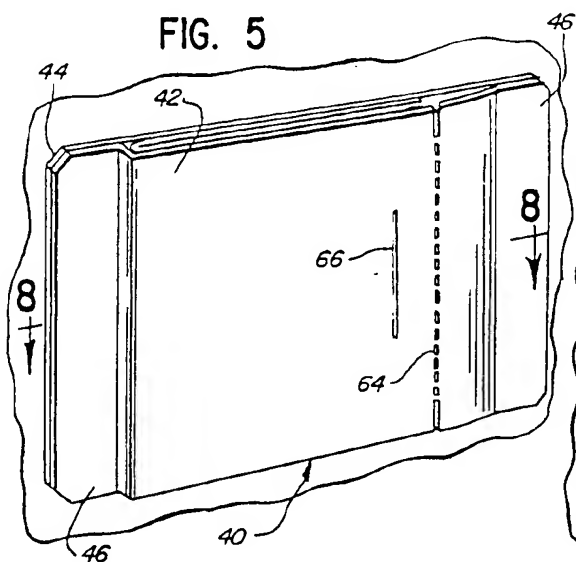


FIG. 6

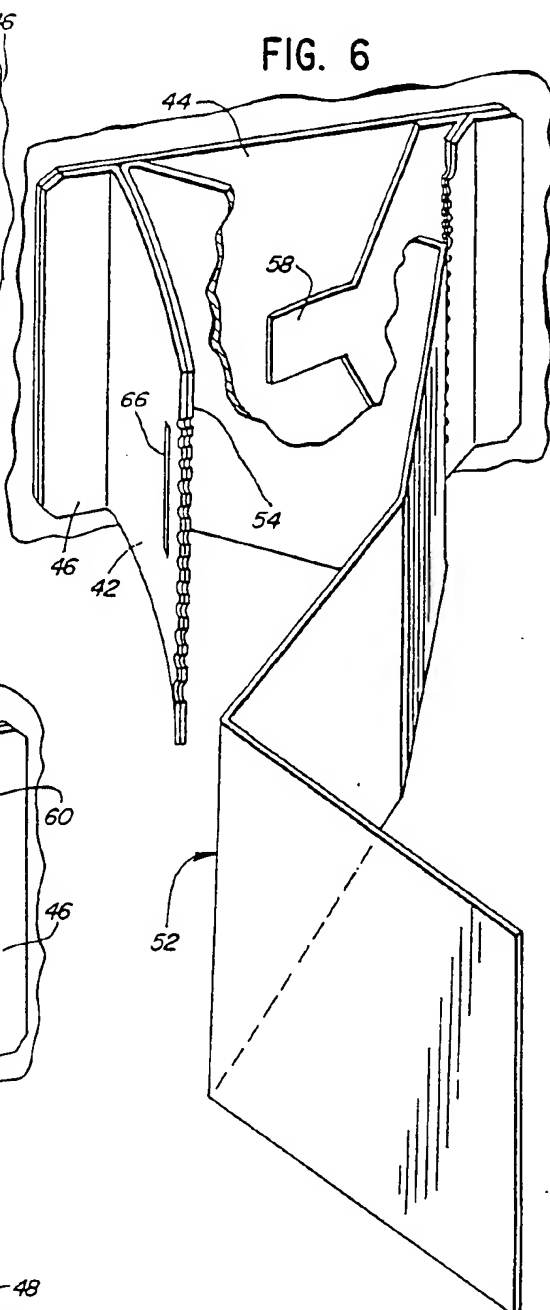


FIG. 7

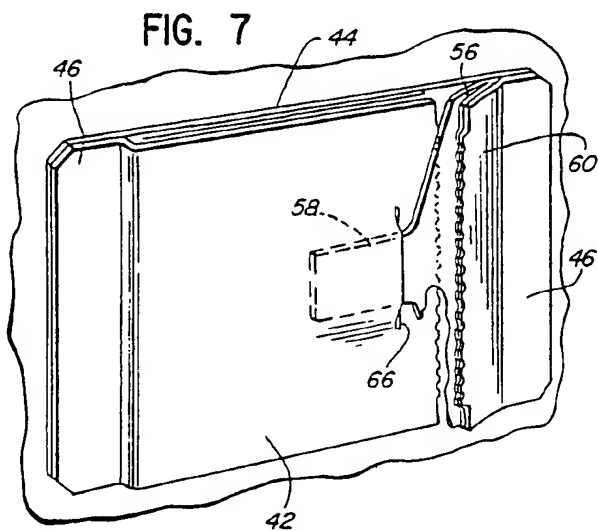
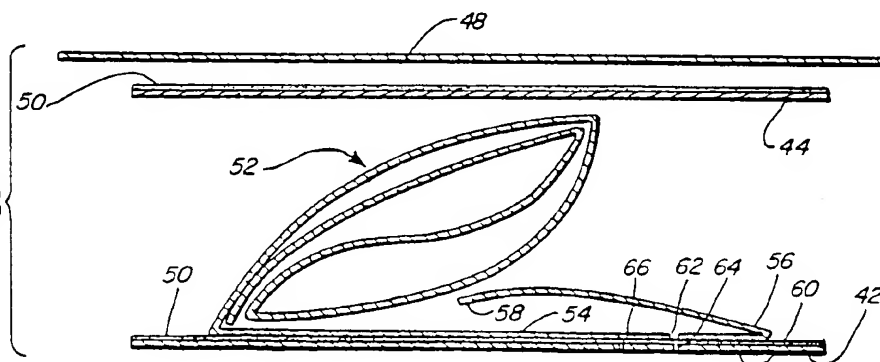


FIG. 8



3 / 3

FIG. 9

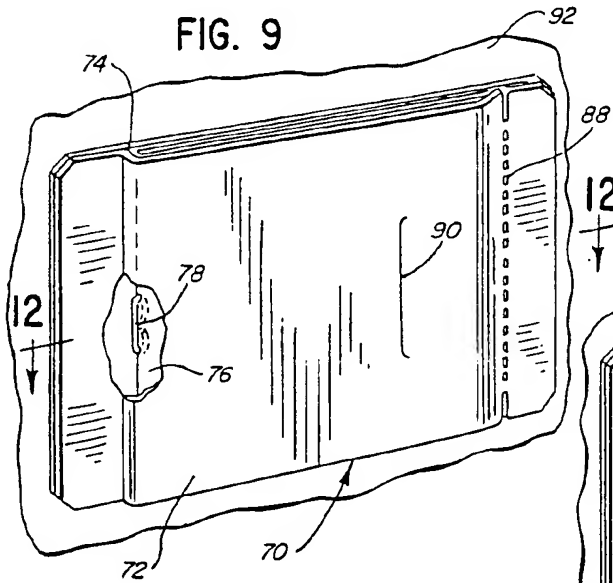


FIG. 10

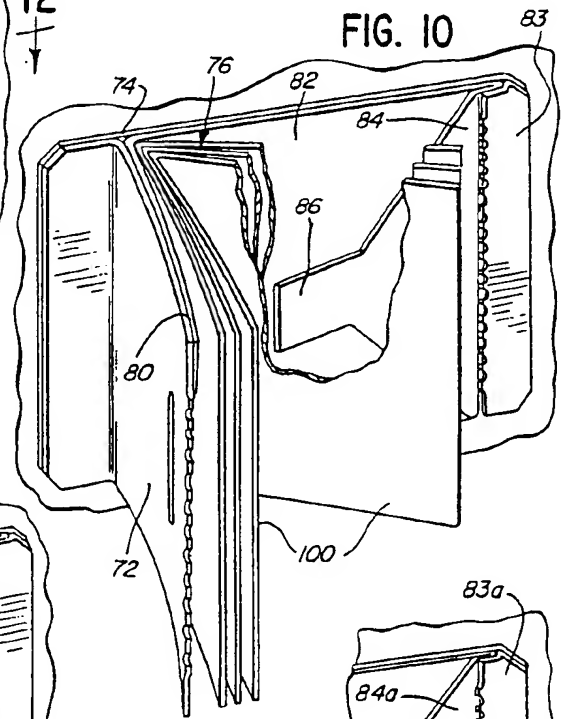


FIG. 11

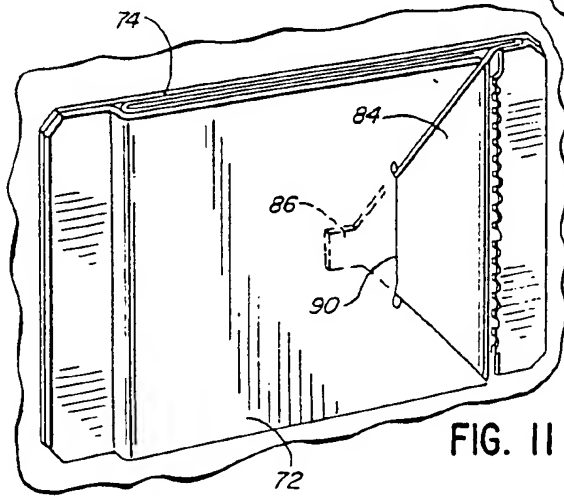


FIG. 13

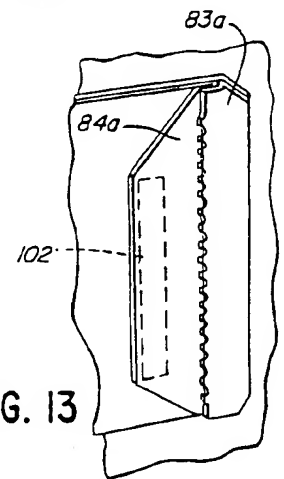
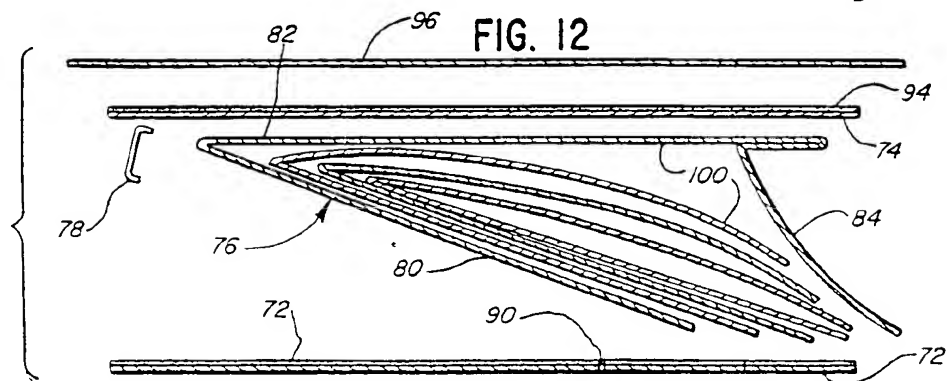
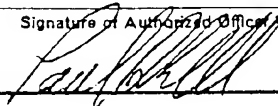


FIG. 12



INTERNATIONAL SEARCH REPORT

International Application No PCT/US86/00154

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ³		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int. Cl(4) B42D 15/00		
U.S. Cl. 283/105		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁴		
Classification System	Classification Symbols	
U.S.	283/52, 56, 81, 105 282/9R 229/73	
Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched ⁵		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category ⁶	Citation of Document, ¹⁵ with indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
Y	US, A, 4,276,334 Published 30 June 1981 Sugihara	1-8
Y	US, A, 4,323,608 Published 6 August 1982 Denney et al.	1-8
Y	GB, A, 2,119,345 Published 16 November 1983 Denny et al.	1-8
A	US, A, 3,858,792 Published 7 January 1975. Volkert	1-8
A	US, A, 4,407,524 Published 4 October 1983 Trautlein	1-8
A, P	US, A, 4,529,229 Published 16 July 1985 Glibbery	1-8
A	CH, A, 27-,850 Published 30 September 1950 J. Evershed & Co. (Bow) Limited	1-8
<p>¹⁶ Special categories of cited documents: ¹³</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search ²	Date of Mailing of this International Search Report ³	
12 March 1986	20 MAR 1986	
International Searching Authority ¹	Signature of Authorized Official ¹⁹	
ISA/US	 PAUL A. BELL PRIMARY EXAMINER	